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Short Fiber-Reinforced Flowable Composite in Cementation of Fiber-Reinforced Composite Post

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Objectives The aim of this *in vitro* study was to investigate bonding of two types of resin composites used as luting cement for fiber-reinforced composite post.
Methods Two different composites were tested; light-cure flowable short fiber-reinforced composite (SFRC) everX Flow (Dentin, GC) and dual-cure composite Gradia Core (GC). Four groups were made with everX Flow and four with Gradia Core. Two different prefabricated fiber-reinforced composite (FRC) posts (diameter 1.6 mm) were used; GC-post (GC) and Snowpost (Abrasive Technology). Posts were conditioned with two different primers; either Ceramic Primer (GC) or G-multiprimer (GC). After conditioning, the posts were placed in the resin composites and pressed between two glass plates along the long axis of the post into thickness of 1.6 mm and then light-polymerized. The post-composite plates were cut to micro-tensile strength test specimens (1.6mm x 1.6mm x 18mm). Eight different test groups were made (n=7 per group). Micro-tensile bond strengths of the specimens were measured and fracture types were categorized.
Results Both composite groups (everX Flow and Gradia Core) had similar bond strength values between 7.5-13.5 MPa. No significant difference in the tensile strength between post and cement materials was found among the groups ($p>0.05$).
The fracture types showed significant differences among the post groups ($p<0.001$) varying from adhesive to cohesive in type.
Conclusions EverX Flow revealed similar bonding properties to FRC post as Gradia Core and could alternatively be considered as a cement material with fiber-reinforced composite post if light curing of the everX Flow can be confirmed.